

Local STEM expertise can be huge asset for schools

For kids in the Acton-Boxborough Regional School District, science and math education can be found well outside the classroom.

Students learn about circumference, weight and volume by playing with fruit at the local Roche Bros. supermarket. They look through giant telescopes at Jupiter and the moon and meet a Galileo impersonator at an annual star party that draws hundreds of people. And they work together with professionals to create exhibits about careers in STEM (That's science, technology, engineering, and math).

Acton-Boxborough, like many school districts in the tech-rich Central Massachusetts area, benefits from the support of parents, local organizations and companies eager to help students learn about the STEM fields. A number of schools in communities with high levels of technology employment also have strikingly high math and science MCAS scores. That's certainly not all due to outside support for STEM programs. These communities are largely relatively high-income places that tend to produce high performing students, and individual traits of the districts matter as well. These are communities that go the extra mile when it comes to STEM education.

At Acton-Boxborough, a parents' group called PIP STEM runs multiple community events each year (PIP stands for Parent Involvement Group).

Karen Herther, one of the founders of PIP STEM, said major companies such as Marlborough medical device company Boston Scientific and Waltham 3D design software firm Solidworks make presentations at events held by the group, and work with students.

"People say, 'How did you get Boston Scientific or Solidworks to exhibit?'" Herther said. "Well, the parents work there."

Other partners in PIP STEM's work have included a local conservation group, The Discovery Museums in Acton and even local water district and transportation system staff, who explain water safety techniques and traffic studies.

QUICK HITS

Number of Central Mass. innovation schools dedicated to STEM education: **6**

Percent of Worcester County residents whose top educational attainment is a bachelor's degree: **22%**

Percent of Southbridge 10th graders who scored proficient or better in the science portion of their MCAS: **39%**

Average teacher salary at Sherborn Regional School District, the highest in Central Mass.: **\$99,858**

2015 full-time enrollment at Worcester Polytechnic Institute, the highest in the region: **4,967**

Sources: U.S. Census Bureau, Mass. Department of Elementary & Secondary Education, WPI

In Hopkinton, another place with a wealth of STEM companies and employees, the school district's technology director, Ashoke Ghosh, said parent groups raise money for things like 3D printers and coding kits. He said parents also sometimes take hands-on roles such as

advising robotics teams.

"We do find that some of the parents that have volunteered for that have engineering backgrounds, or they're stay-at-home parents with degrees related to STEM," Ghosh said.

Ghosh said local companies help out with funding and more directly, such as sending engineers to support students' coding projects.

Beyond doing a nice thing for local kids, of course, tech companies have a self-interest to support STEM education: They're always looking for qualified new employees. Tom Hopcroft, president and CEO of the Massachusetts Technology Leadership Council, said the industry is in desperate need of talent, if it's going to grow as fast as possible. One of the council's goals is ensuring more schools — including ones in parts of the state where technology is a less dominant industry — see what STEM looks like in the real world.

"One of the simplest things we can do is inspire kids, [show them] how technology is changing the world," Hopcroft said. "We know we need to expose kids at earlier ages."

Herther said PIP STEM wants to help students in other areas benefit from the expertise the group has gained in its 14 years of operation. Many of PIP STEM's events are open to people from outside the Acton-Boxborough district, and it's looking for ways to work directly with other schools and parents.

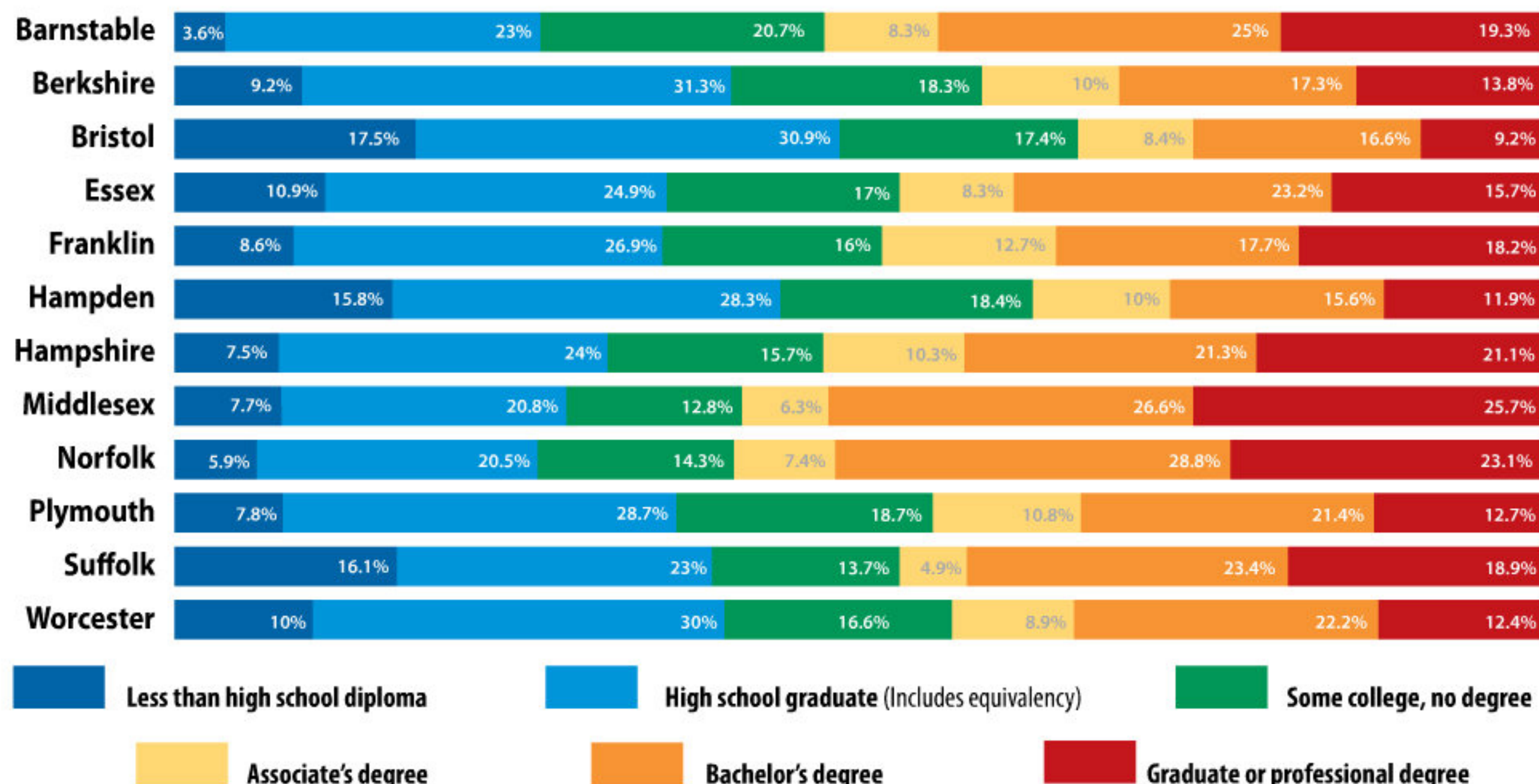
"It could be a model for other communities looking to engage schools and community members around STEM pipelines," Herther said.

The group is hosting an open house with STEM professionals and their student collaborators on Nov. 2, as it does every two years, and Herther said she's hoping people from outside Acton-Boxborough will come check out the group's work.

By Livia Gershon

Special to the Worcester Business Journal

Educational attainment in Massachusetts by county, 2014 (ages 25 and over)



Source: U.S. Census Bureau - 2014 American Community Survey NOTE: Some counties' total percentages may not add up to 100 due to rounding.